

Atty. Dkt. No. QUANT1390
(028248-3201)

Amendments to the Claims/Listing of Claims:

Please amend claims 38, 39 and 40, cancel claims 3 and 7, and add new claims 43-44 as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) An adhesive composition comprising at least one maleimide-containing monomer, optionally at least one cure initiator, and a plurality of spacers constructed from one or more organic polymers.
2. (Original) The adhesive composition according to claim 1, wherein said spacers are substantially spherical.
3. (Cancelled)
4. (Original) The adhesive composition according to claim 3, wherein said spacers have a particle size in the range of about 0.1 mils up to about 15 mils.
5. (Original) The adhesive composition according to claim 1, wherein said organic polymers are substantially uncrosslinked.
6. (Original) The adhesive composition according to claim 1, wherein said organic polymers are polymerization products of optionally substituted ethylenically unsaturated monomers.
7. (Cancelled)

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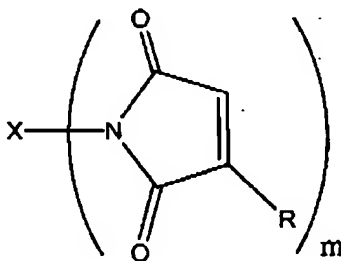
8. (Original) The adhesive composition according to claim 1, wherein said organic polymers are polymerization or copolymerization products of (meth)acrylates.

9. (Original) The adhesive composition according to claim 1, wherein said organic polymer is polymethylmethacrylate.

10. (Original) The adhesive composition according to claim 9, wherein said polymethylmethacrylate has a molecular weight in the range of about 50,000 up to about 1,500,000.

11. (Original) The adhesive composition according to claim 9, wherein said polymethylmethacrylate has a molecular weight in the range of about 400,000 up to about 500,000.

12. (Original) The adhesive composition according to claim 1, wherein said maleimide-containing monomer has the following structure:



wherein:

$m = 1-6$,

each R is independently selected from hydrogen or lower alkyl, and

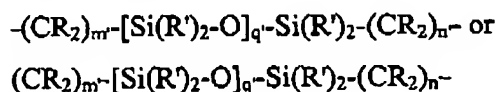
X is a monovalent moiety or a multivalent linking moiety.

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13. (Original) An adhesive composition according to claim 12, wherein said monovalent moiety or multivalent linking moiety is selected from

(I) straight or branched chain alkyl, alkylene, oxyalkylene, alkenyl, alkenylene, oxyalkenylene, ester, or polyester, optionally containing substituents selected from hydroxy, alkoxy, carboxy, nitrile, cycloalkyl or cycloalkenyl,

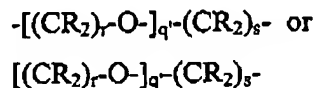
(II) siloxanes having the structure:



wherein

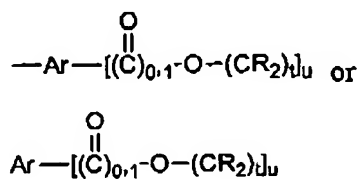
each R is independently defined as above,
and each R' is independently selected from
hydrogen, lower alkyl or aryl, m' falls in the range
of 1 up to 10, n' falls in the range of 1 up to 10, and
q' falls in the range of 1 up to 50,

(III) polyalkylene oxides having the structure:



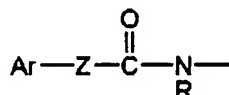
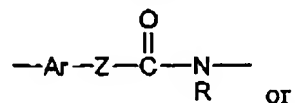
wherein each R is independently as defined above, r falls in
the range of 1 up to 10, s falls in the range of 1 up to 10,
and q' is as defined above,

(IV) aromatic moieties having the structure:



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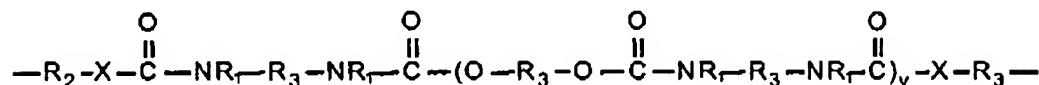
wherein each R is independently as defined above, t falls in the range of 2 up to 10, u is 1, 2 or 3, and Ar is as defined above, or



wherein

Z is O or NR, wherein R is hydrogen or lower alkyl,

(V) urethanes having the structure



wherein:

each R₁ is independently hydrogen or lower alkyl,

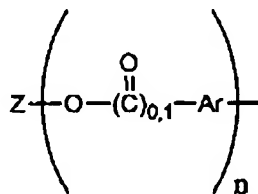
each R₂ independently is an alkyl, aryl, or arylalkyl group having 1 to 18 carbon atoms;

R₃ is an alkyl or alkyloxy chain having up to about 100 atoms in the chain, which chain may contain aryl substituents;

X is O, S, N, or P; and

v is 0 to 50,

(VI) aromatic moieties having the structure:



wherein

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each Ar is a monosubstituted, disubstituted or trisubstituted aromatic or heteroaromatic ring having in the range of 3 up to about 10 carbon atoms,

n is 1 up to about 50, and

Z is selected from:

straight or branched chain alkyl, alkylene, oxyalkylene, alkenyl, alkenylene, oxyalkenylene, ester, or polyester, optionally containing substituents selected from hydroxy, alkoxy, carboxy, nitrile, cycloalkyl or cycloalkenyl,

siloxanes having the structure:



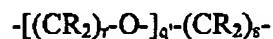
wherein

each R is independently defined as above,

and each R' is independently selected from

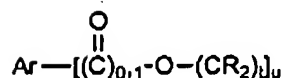
hydrogen, lower alkyl or aryl, m' falls in the range of 1 up to 10, n' falls in the range of 1 up to 10, and q' falls in the range of 1 up to 50,

polyalkylene oxides having the structure:



wherein each R is independently as defined above, r falls in the range of 1 up to 10, s falls in the range of 1 up to 10, and q' is as defined above,

aromatic moieties having the structure:



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wherein each R is independently as defined above, t falls in the range of 2 up to 10, u is 1, 2 or 3, and Ar is as defined above, as well as mixtures of any two or more thereof.

14. (Original) The adhesive composition according to claim 1, wherein said cure initiator is a free-radical cure initiator.

15. (Original) The adhesive composition according to claim 14, wherein said free-radical cure initiator is a member selected from the group consisting of peroxy ester, peroxy carbonate, hydroperoxide, alkylperoxide, arylperoxide, or azo compound.

16. (Original) An adhesive composition according to claim 1, wherein said composition comprises in the range of about 1 wt% up to about 95 wt% at least one maleimide-containing monomer, in the range of about 0.2 wt% up to about 2.0 wt% at least one cure initiator, and in the range of about 1 wt% up to about 95 wt% at least one spacer constructed from one or more organic polymers.

17. (Original) An adhesive composition according to claim 16, wherein said composition comprise in the range of about 1 wt% up to about 50 wt% at least one spacer constructed from one or more organic polymers .

18. (Original) An adhesive composition according to claim 17, wherein said composition comprises in the range of about 1 wt% up to about 10 wt% at least one spacer constructed from one or more organic polymers.

19. (Original) An adhesive composition according to claim 1, further comprising at least one coupling agent.